

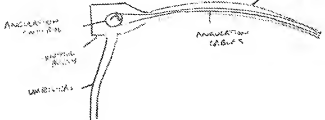
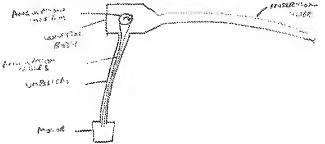

REMARKS/ARGUMENTS

Claims 1-8 are pending.

Claims 1-8 stand rejected under 35 U.S.C. 102(c) as anticipated by U.S. Patent No. 6,929,481 (Alexander).

All rejections are respectfully traversed.

Reference is made to the below sketches which shows a real endoscope, a dummy endoscope according to claim 1, and a dummy endoscope as disclosed as in Alexander, with explanation provided adjacent each sketch.

|  |   |
|--|---|
| <p>angulation cables extend from an angulation control to the tip of the insertion tube. In use, by manipulating the angulation controls, the user is able to pull on the angulation cables to bend the tube and hence to steer the tip of the insertion tube.</p> | <p><u>REAL ENDOSCOPE</u></p>                 |
| <p>An angulation cable extends from the angulation control and is routed down the umbilical and a motor applies force to the cable and hence provides force feedback to the angulation control.</p>  | <p><u>DUMMY ENDOSCOPE - CLAIM 1</u></p>      |
| <p>Alexander does not have an angulation cable or a motor.</p>   | <p><u>DUMMY ENDOSCOPE - ALEXANDER</u></p>  |

As shown in the sketches above, a real endoscope has angulation cables that extend from an angulation control to the tip of the insertion tube. In use, by manipulating the angulation controls, the user is able to pull on the angulation cables to bend the tube and hence to steer the tip of the insertion tube.

In the claimed device, an angulation cable is routed down the umbilical to a motor which is able to provide the necessary resistance and hence the force feedback to the angulation control. The advantages of the present invention are that it preserves as much as possible of the original endoscope design and is able to provide a realistic experience for a user.

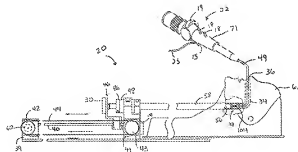
By contrast, Alexander discloses none of the key features of the invention. In particular, it does not disclose an umbilical, angulation cables or a motor.

The Examiner's identification of these components in Alexander is believed to be in error for the reasons set out below.

#### Umbilical

The Examiner identifies the guide tube 34 as providing the umbilical.

Claim 1 requires that the umbilical is part of the instrument, and requires a control body with user manipulatable angulation control, an insertion tube and an umbilical extending from the control body. In Alexander, column 9, lines 20 to 23 make it clear that guide tube 34 relied upon by the Examiner is part of "a mock bodily region of interest having an orifice for receiving an endoscope". The guide tube 34 is therefore part of the unit into which the insertion tube of the instrument is inserted, not part of the instrument itself. The difference is readily apparent from Fig. 3 of Alexander et al:



Thus, the Examiner has taken a strained and overly broad interpretation of the claims and the rejection is premised on an unreasonable claim construction and a strained reference interpretation that is inconsistent with the reach of the claimed subject matter when given its broadest reasonable interpretation consistent with the Specification as it would have been understood by one of ordinary skill in the art.. As such, the rejection is in error. *See, Ex parte Ma et al.*, Appeal No. 2010-3794 (BPAI)). The claims are always to be read or interpreted in light of the specifications. *In re Sulco Surface, Inc.*, 603 F.3d 1255 (Fed. Cir. 2010).

In this case, claim 1 requires “an umbilical extending from the control body.” The guide tube 34 relied upon by the Examiner does not extend from the control body 21, but is rather part of a different device entirely. Thus, the tube 34 fails in all respects to fulfil the requirements of the claimed umbilical and the rejection is unsustainable.

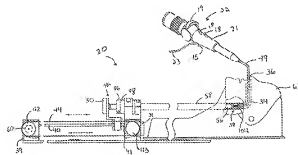
Angulation Cables

The Examiner has identified the belt 44 or (or 424) as representing the angulation cable.

Again, this falls at the first hurdle as claim 1 clearly requires the angulation cable to extend from the user manipulatable angulation control, and down the umbilical. Because the guide tube 34 does not provide the claimed umbilical, the requirements regarding the angulation cable are also not met by Alexander.

Further, in Alexander, the belt 44/424 is part of the base unit into which the instrument is inserted. One of ordinary skill in the art would never consider the belt 44, 424 to be an angulation cable firstly because it is arguable whether the belt is a cable, and more importantly, because the belt has nothing to do with angulation control. The function of the belt 44 is described in the paragraph spanning pages 10 and 11 of Alexander. This concerns providing force feedback on the insertion tube purely relating to the physical extent to which the insertion tube is pushed into the base unit. This has nothing to do with angulation. Angulation is dealt with in the paragraph beginning at the top of column 12. Alexander provides a thumb lever 19 which has an encoder to measure its degree of rotation. Alexander discloses that there may be angulation force feedback. However, it is specifically stated (in column 12, lines 10-13 that) no mechanism for angulation force feedback is shown.

But, in any event, claim 1 requires that the angulation cable extend “down the umbilical.” Even if the Examiner’s identification of the umbilical as guide tube 34 and the angulation cable as belt 44 are correct, Alexander would still fail to disclose this critical relationship that the angulation cables extend down the umbilical. There is quite clearly considerable distance between guide tube 34 and the belt 44. There is no way that the belt 44 could extend down the tube 34:



It is respectfully asserted that the Examiner’s understanding of the structure and operation of Alexander is in error. For example, as set forth in paragraph 5 of the Office Action, the Examiner appears to assert that Alexander discloses some sort of angulation force feedback mechanism. However, it is worth repeating that Alexander itself does not specify such a mechanism and clearly states that it is not shown (column 12, lines 10-13): The thumb lever (19) may optionally include computer controlled force feedback via an actuator (not shown).

In fact, Alexander does not disclose angulation cables and, even if the Examiner is correct in his identification of the umbilical and angulation cables, Alexander fails to disclose a critical relationship, namely that the cables extend down the umbilical.

#### The Motor

Claim 1 requires “a motor within the instrument at a distal end of the umbilical to apply a variable force to the cable.” The Examiner identifies force feedback unit 60 providing this motor. This motor is designed to impede rotation of the pulley and hence the motion of the belt 44 which is therefore designed to provide resistance to the longitudinal position of the

endoscope. This provides force feedback against the insertion force and has nothing to do with the angulation force feedback.

The motor 60 also fails to fulfil of any of the functions of the motor claimed in claim 1.

It is not "within the instrument". It is in the base unit. It is not "at the distal end of the umbilical." As mentioned above, Alexander does not disclose an umbilical. However, even if the guide tube 34 is taken as being the umbilical, the motor is not "at the distal end" of this. Instead, it is a long way from this tube 34 and there are many intervening components. Finally, it cannot apply a variable force to the angulation cable as there is no angulation cable disclosed.

Summary

In summary, the present invention provides a highly effective and realistic means of applying angulation force feedback in a dummy instrument. By contrast, Alexander discloses no structure corresponding to the claimed structure and fails to describe any mechanism for providing angulation force feedback.

Reconsideration and issuance of a Notice of Allowance is requested. In the event this response is not timely filed, Applicants hereby petition for the appropriate extension of time and request that the fee for the extension along with any other fees which may be due with respect to this paper be charged to our **Deposit Account No. 12-2355**.

Respectfully submitted,

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